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Craspedodidymella matogrossensis gen. & sp. nov. from the Brazilian Amazon rainforest

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Abstract—An interesting hyphomycete collected during investigations of microfungi on decaying branches of a liana in the Brazilian Amazon rainforest is described and illustrated as a new genus and species, *Craspedodidymella matogrossensis*. The new fungus is distinguished by the conidiophore percurrent extensions, very large cracked and multilayer collarette caused by enteroblastic percurrent regeneration, and endogenous septate conidia.

Key words—asexual fungus, taxonomy, tropical fungi

Introduction

In addition to possessing the greatest extent of tropical forest of the world, the Amazon biome stands out for its great biological diversity (Marengo 2007). Saprobic hyphomycetes have been widely studied in the Brazilian semi-arid region, but in the Amazon those fungi are still poorly known (Monteiro et al. 2014). A survey of hyphomycetes associated with lianas was undertaken in the Brazilian Amazon Forest and an interesting phialidic fungus was discovered. This fungus showed differences from all the previously described species and represents a new genus and species, which are described and illustrated here.

Materials & methods

Samples of woody debris of lianas were collected at the Amazon forest in Mato Grosso state, Cláudia city, placed in paper bags, and taken to the laboratory at Universidade Federal de Mato Grosso. The samples were treated according to Castañeda-Ruiz et al. (2016). Permanent slides were prepared in PVL resin (polyvinyl alcohol, lactic acid, and phenol) and reproductive structures were measured. Micrographs were obtained with a BX51 Olympus compound microscope equipped with bright field and Nomarski interference optics. The type specimen was deposited in the Herbarium of Universidade Federal de Mato Grosso, Sinop, Brazil (CNMT).

Taxonomy

Craspedodidymella F.R. Barbosa, R.F. Castañeda & Gusmão, **gen. nov.**

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Differs from *Craspedodidymum* by its more distinct multilayered collarette and by its endogenous conidia.

Type: *Craspedodidymella matogrossensis* F.R. Barbosa et al.

Etymology: Latin, *Craspedodidym-* referring to the genus *Craspedodidymum*; Latin, *-ella*, a diminutive.

Asexual fungus. Conidiophores macronematous, mononematous, septate, straight or flexuous, pigmented. Conidiogenous cells enteroblastic, with several successive enteroblastic percurrent regenerations of the inner wall in the collarette after the production of each conidium, very distinct multilayered collarette, pigmented; conidial secession schizolytic. Conidia solitary, endogenous, septate, pigmented.

Craspedodidymella matogrossensis F.R. Barbosa, R.F. Castañeda & Gusmão, **sp. nov.** Figs 1,2

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Differs from *Craspedodidymum* species by its very large multilayered collarette and its endogenous conidial ontogeny.

Type: Brazil, Mato Grosso State, Claudia city, 11°34′54″S 55°17′15″W, on decaying wood of liana, 08.IV.2016, coll. F.R. Barbosa (**Holotype**: CNMTf 39).

Etymology: *matogrossensis*, refering to the location where the fungus was found.

Colonies scattered, dark brown. Conidiophores macronematous, mononematous, robust, erect, straight or flexuous, unbranched, 8–13-septate (mainly 9-septate), with percurrent extensions, brown, smooth, 235–480 × 5–5.5 µm. Conidiogenous cells enteroblastic, monophialidic, terminal, determinate, brown to pale brown, 47–62 × 4–5 µm, with a very distinct cracked and multilayered collarette, 8–14 × 10–13 µm resulting from percurrent

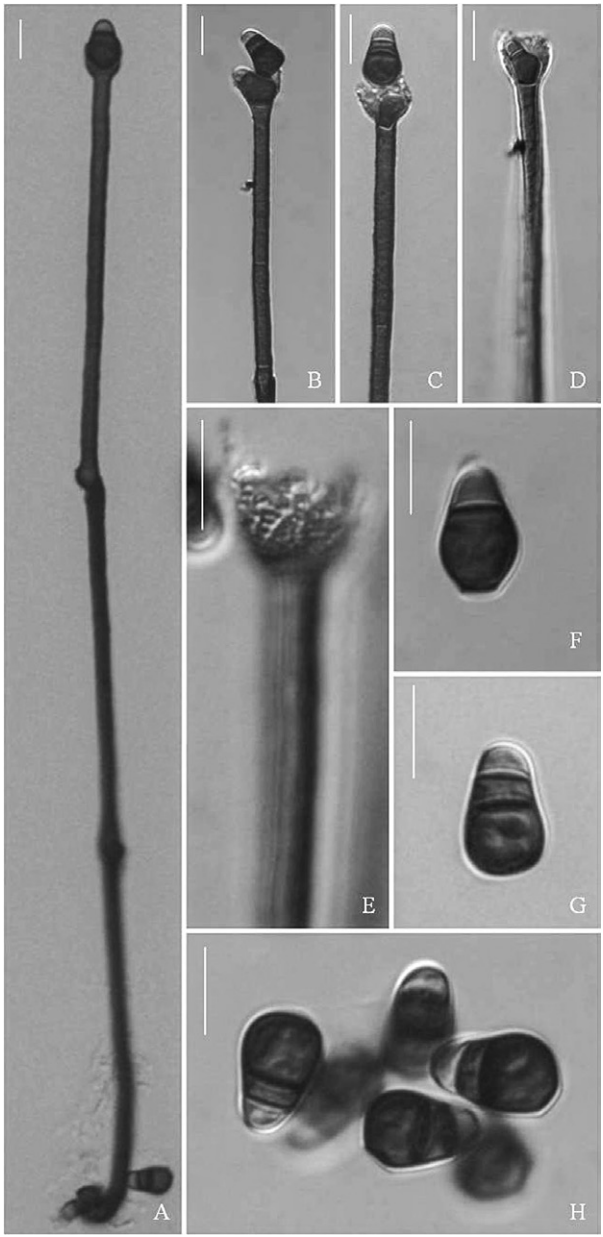

Fig. 1. *Craspedodidymella matogrossensis* (holotype, CNMTf 39). A. Conidiophore, conidiogenous cell, and conidia on the natural substrate; B–D. Details of the conidiophore apex with conidia; E. Details of the cracked conidiogenous cells; F–H: Conidia. Scale bars = 10μm.

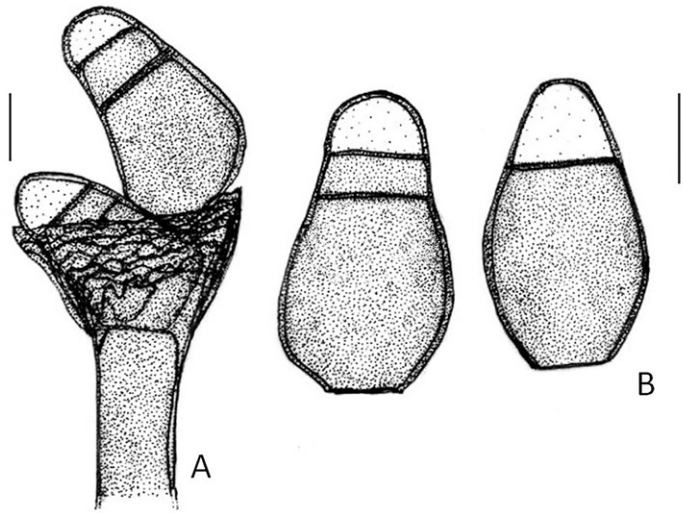

Fig. 2. *Craspedodidymella matogrossensis* (holotype, CNMTf 39).
A. Details of the conidiophore apex with conidia. B. Conidia. Scale bars = 5 µm.

regenerations. Conidial secession schizolytic. Conidia solitary, broadly ovoid, fixed laterally by a swollen basal cell, slightly curved, 1–2-septate, rounded at the apex, basal cell dark brown, sometimes eccentric subtruncate, intermediate cell brown and apical cell light brown, smooth, dry, 13–15 µm long, 8–10 µm thick in the broadest part and 5–6 µm thick in the narrowest part.

Comments—*Craspedodidymum* Hol.-Jech. was typified by *C. elatum* Hol.-Jech. collected from a palm petiole (Holubová-Jechová 1972). That genus is characterized by conidia that are solitary, 0-4-septate, brown to dark brown, and semi-endogenous with a funnel-shaped collarette (Holubová-Jechová 1972, Seifert et al. 2011), while in *Craspedodidymella* conidia are endogenously produced through a broad multilayered collarette. The multilayered collarette is the result of repeated enteroblastic percurrent regenerations of the conidiogenous cells. This event is similar to a pattern of conidiogenesis described by Kirk et al. (2008: Fig 2, #20).

The new genus *Anacraspedodidymum* C.R. Silva et al. (Silva et al. 2014) also produces a collarette but differs from *Craspedodidymella* by having hyaline basal apiculate conidia that sometimes have mucilaginous adherences.

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